

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 25-48 are pending; Claims 1-24 having been canceled without prejudice or disclaimer and Claims 25-48 having been added by way of the present amendment. Claims 25-48 find support in the original Claims 1-24, as well as in the specification as originally filed. Thus no new matter is added.

In the outstanding Office Action Claims 1 and 8 were rejected as being anticipated by Okumura (WO 96/26582); Claims 2-7 and 9-14 were rejected as being unpatentable over Okumura in view of Rhines (U.S. Patent No. 5,392,299); and Claims 15-24 were indicated as being allowed.

Applicants appreciatively acknowledge the identification of allowable subject matter.

In reply, Applicants have canceled Claims 1-24 (although are still grateful for the indication of allowable subject matter) because upon further review it was believed that a rewording of the claims would be helpful to clarify the inventive features of the present invention.

In reply to the objection to the drawings, a separate letter requesting entry of new drawings addressing the objections in paragraphs 1-3 of the outstanding Office Action is filed herewith. However, the legend "prior art" was not added to Figures 4 and 5 because the figures are used to describe an embodiment of the present invention.

The newly added claims are directed to an interleaving method (independent Claims 25 and 26) and a transmitter using an interleaver having the inventive features associated with the interleaving method. Moreover, the present invention relates to a transmitter (and interleaving method used in the transmitter) for multiplexing a plurality of information data into multiplexed signals, interleaving the multiplexed signals by using an interleaver, and sending a frame signal including slots, each of which includes the multiplexed signals that are

interleaved, wherein the structure of the interleaver is a matrix with B rows and F columns. In the interleaver, the multiplexed signals are written into the matrix, signals in the matrix are permuted by permuting columns in the matrix on the basis of a predetermined rule, then signals in the matrix are read out. In addition, the number F of columns of the matrix is twice as many as the number of slots of the frame. When the slot includes a pilot signal, the number F of columns of the matrix is $2N$ times as many as the number of slots of the frame, where n is a positive integer.

Okumura describes an interleaver having M columns wherein M is a number of slots. However, Okumura does not suggest that the number of columns is twice as many as the number of slots, or the number of columns is $2N$ times as many as the number of slots. In addition, Okumura does not suggest a claimed feature of "permuting signals in said matrix by permuting columns of said matrix".

Rhines describes row data shuffling among data planes as shown in Figures 4A and 4B. In Rhines, rows are shuffled, but each shuffled row has maintained its same row position as shown in Figure 4B (column 10, lines 42-43). Thus, Rhines does not suggest the claimed feature "permuting signals in said matrix by permuting columns of said matrix". In addition, Rhines does not suggest that the number of columns in the interleaver is twice as many as the number of slots, or the number of columns is $2N$ times as many as the number of slots.

Since neither reference is believed to teach or suggest the above-described features of the present invention, it is believed that each of the independent claims of the present invention is patentable over the asserted prior art. It follows that each of the claims that depend from the independent claims are also patentable.

Consequently, in view of the present amendment and addition of new claims that clearly distinguish the asserted prior art, it is believed that the invention defined by Claims 25-48 patentably defines over the asserted prior art. The present application is therefore

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Reply to Office Action of April 20, 2004

believed to be in condition for formal allowance and an early and favorable reconsideration
of this application is therefore requested.

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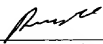
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Respectfully submitted,

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